DOCUMENT RESUME

ED 405 466 CE 073 646

AUTHOR Goosman, William F.
TITLE Learning How To Compete. Workforce Skills and State Economic Development Policies. Investing in People Project. Issue Paper No. 5.
INSTITUTION Jobs for the Future, Boston, MA.; National Conference of State Legislatures, Denver, CO.
SPONS AGENCY DeWitt Wallace / Reader's Digest Fund, Pleasantville, N.Y.
REPORT NO ISBN-1-55516-349-1
PUB DATE Feb 95
NOTE 34p.
AVAILABLE FROM National Conference of State Legislatures, 1560 Broadway, Suite 700, Denver, CO 80202 (item #3126, $15).
PUB TYPE Information Analyses (070) -- Reports - General (140)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Economic Change; *Economic Development; Educational Needs; *Education Work Relationship; Employer Employee Relationship; Employment Practices; *Futures (of Society); *Government Role; Labor Force Development; Policy Formation; Postsecondary Education; Public Policy; Secondary Education; *State Government

ABSTRACT

This report is part of the Investing in People Project, in which states worked to develop and implement work force preparation and training strategies to meet the challenge of a competitive global economy. The choices that states, firms, and individuals must make in order to enjoy a high standard of living are discussed. In order to achieve a high standard of living, states need to change their focus from "cheap" and "quick" job training to long-term educational changes that will ensure highly skilled workers and to persuading industries and companies to become high-performing competitors in the world marketplace. The three sections of this report discuss the following: (1) the new world economy and the realities of change, including the worldwide marketplace, changing products and technology, current state economic development strategies, and smart workers and smart businesses; (2) new realities and changing roles, such as new awareness of change and choices, new structures and helping industries themselves, and managing the transition; and (3) education, work force skills, and economic competitiveness, including the need to move businesses up the performance curve, smoothing the school-to-work transition, training the 75 percent of students who do not graduate from college, and job training for adult workers. Contains 24 references. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

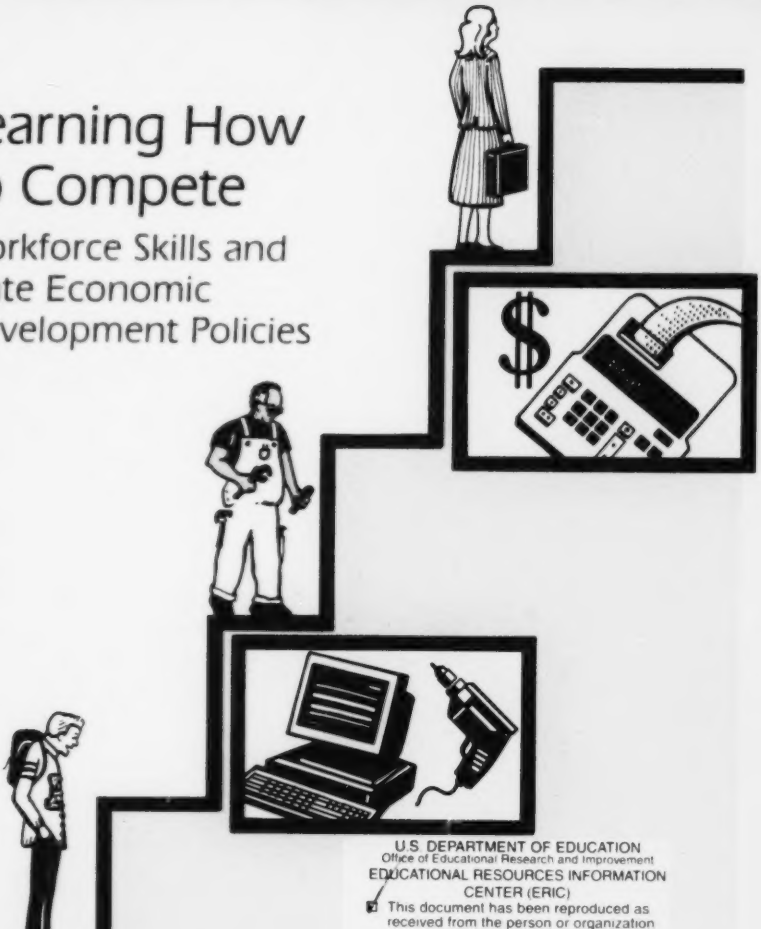
CE

ED 405 466

Investing In People

Learning How to Compete

Workforce Skills and State Economic Development Policies



CE073646

BEST COPY AVAILABLE

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY

GLOOS

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Learning How to Compete

Workforce Skills and State Economic Development Policies

Issue Paper No. 5
Investing in People Project

A joint project of
National Conference of State Legislatures
and
Jobs for the Future

by William F. Goosman

February 1995

National Conference of State Legislatures
William T. Pound, Executive Director

1560 Broadway, Suite 700
Denver, Colorado 80202
(303) 830-2200
444 North Capitol Street, N.W., Suite 515
Washington, D.C. 20001
(202) 624-5400

Jobs for the Future
Hilary Pennington, President

One Bowdoin Square
Boston, Massachusetts 02114
(617) 742-5995

Printed on recycled paper

Cover Design: Todd A. Vandyke
Book Design: Rust Graphics

© 1995 by National Conference of State Legislatures. All rights reserved.
ISBN 1-55516-349-1

Contents

Preface and Acknowledgments v

Executive Summary vii

The New World Economy: The Realities of Change 1
- The Worldwide Marketplace 1
- Changing Products and Technology 2
- Current State Economic Development Strategies 3
- Smart Workers, Smart Businesses: Competence and Competition 5

New Realities, Changing Roles 7
- New Roles 7
- New Awareness 8
- New Structures: Helping Industries Help Themselves 9
- Managing the Transition 11

Education, Workforce Skills, and Economic Competitiveness 13
- Moving Business Up the Performance Curve 13
- The Classroom and the Workplace 15
- School-to-Work Transition: Training the Noncollege-Bound 16
- Workforce Training 19
- Adult Workers 20

Conclusion 21

References and Recommended Reading 23

About the Author 25

Preface and Acknowledgments

This report is part of the Investing in People (IIP) Project financed by the DeWitt Wallace-Reader's Digest Fund. The fund's overall goal is to help American youth fulfill their educational and career aspirations. The fund's support and commitment to the IIP project is greatly appreciated.

During this project the National Conference of State Legislatures (NCSL) and Jobs for the Future (JFF) helped six states—Connecticut, Iowa, Kentucky, Ohio, Washington, and West Virginia—develop and implement workforce preparation and training strategies to meet the challenge of a competitive global economy. Each state selected teams made up of legislators, legislative staff, business leaders, educators, labor representatives, and other political and civic leaders to help develop and implement long-range strategies that coordinate and improve education, workforce training, and economic development systems. The project included two policy institutes, extensive technical assistance, and several issue papers. This paper is the fifth and final in the series.

Special thanks are due for the time and efforts of former Kentucky state representative Bill Lear, Ohio legislative budget analyst Kathy Schill, and Connecticut legislative research principal analyst John Rappa, who acted as outside readers of this report.

Executive Summary

State economies are contending with forces that are fundamentally altering what it takes to compete and, therefore, what it will take for states to succeed.

In many ways, it is as easy to make something in Malaysia as in Massachusetts, a situation that exposes U.S. citizens to competition from areas of the world where a day's wage is less than what many American workers make in an hour. In addition to *where* things are made, important changes also are taking place in *how* things are made. Mass production methods are giving way to shorter runs of a variety of products customized on flexible machines through the application of computers and other advanced technologies. More customized products create more specialized markets (or vice versa) and more specialized demands from consumers. In order to keep up, businesses are "flattening" themselves, cutting out layers of middle managers to increase their flexibility and the speed with which they can react to changes in products and markets.

Many regions are finding that only by adopting such production methods can they develop the types of high value-added products that can move them toward the high end of international competition and, in that way, improve their standards of living. Compared with mass production, these emerging methods require dramatically different skills and equipment if businesses and their workers are to succeed. The implications are dramatic for existing state economic development efforts and for state government education and training programs and policies intended to prepare their citizens for a different working world.

Most state development programs have one goal—jobs—and one approach—keep down the cost of doing business: keep taxes low and provide various financial incentives like tax credits and subsidized training. However, the nature of the forces affecting competitiveness are different from those that justified the cost approach. As a consequence, many states have begun to rethink their strategies intended to help business and prepare the workforce. They are realizing that competing on the basis of cost is a battle they, literally, cannot afford to win. Increasing technical sophistication, decentralized decision making, and the like place a premium on the skills and knowledge needed by the workforce—both management and production workers—to create new products more quickly, to remain aware of how markets are changing, and, especially, to continually learn and adapt to the changes in both.

Effective responses, though, require fundamental shifts in public policies in business assistance and drastic reorientation of existing education and training programs. Few existing business assistance programs are equipped to discuss in a comprehensive fashion the factors affecting the competitiveness of industry. They will have to move away from dealing with businesses one at a time because the forces at work are affecting the competitiveness of whole industries and regions. They will have to realize that subsidized training without attention to the competition is wasteful and potentially disastrous in the long run. They will have to recognize the complex environment in which business competes and acknowledge that in many instances government may not be the best source for answers. Budget restraints and practicality already are forcing states to find new ways and new institutions to design, pay for, and deliver assistance. These changes will probably reverberate throughout state government; there will be resistance to change and predictable reactions to threats to funding and program status. In short, state legislatures will have their hands full trying to convince people of the need for change and then implementing the necessary changes.

Although the magnitude of these changes may be unnerving, states possess powerful tools to effect the needed changes. States are also in a unique position to use those tools to help workers, firms, and communities respond to these challenges. For instance, states can see the global "playing field" like few other players, they are in a position to explore better ways to coordinate the disparate programs and people important to the solution, and they can bring together new combinations of players to explore new solutions. States are working with companies and industry associations to increase awareness about changes in the nature of competition. Together, they are publicizing new management and organizational structures and new methods of production, and they are working with groups of firms to ease the transition to a global standard of conduct. Instead of offering tax credits for relocating, states are supporting business and workers that are moving toward the high end of the continuum of global competition on the basis of value and quality.

Nowhere is the need for understanding the nature and implications of the changes in the global economy more important than in the area of education and training, for both workers and management. This is especially true in terms of how education and training link up with rapid changes in technology, products, and manufacturing processes. Fortunately, the states' primary role in education has them well-positioned to respond. School reform efforts since the publication of *A Nation at Risk* are legend. Recent efforts are focusing on improving the links between what students learn in class and what will be required of them in the workplace, improving the coordination of existing federal job training programs, improving retraining programs for older workers, and supporting apprentice programs for the noncollege-bound.

To compete in a global economy as an individual, a firm, or a community will require society to make hard choices, but those choices will determine whether each enjoys a high standard of living and quality of life. The discussion of those choices will be undertaken in each of the 50 state legislatures. That is why the National Conference of State Legislatures has developed this booklet and its four companion volumes on school-to-work transition, restructuring education, workforce development, and the needs of older workers.

The New World Economy: The Realities of Change

The talk today is of the "changing world economy." I wish to argue that the world economy is not "changing": it has already changed*--in its foundations and in its structure—and in all probability the change is irreversible.*

Peter Drucker

Management consultant Peter Drucker wrote the words quoted above eight years ago, in 1986. His analysis, confirmed by many others in the intervening years, offers convincing arguments that fundamental changes have occurred in the nature of the world's economy, changes that have irrevocably altered what economic survival requires of business and workers. They also portend the need for a shift in current approaches to state economic development programs and policies, approaches that may be worse than irrelevant.

The Worldwide Marketplace

In essence, Drucker and other experts note that many of the factors of production—raw materials, factories, and the money for both—are able to move freely about the world. The declining costs and increasing ease of worldwide transportation and communication, coupled with financial markets that reach worldwide for investment opportunities, have changed the dynamics of business competition. In the past, companies were compelled to locate near the source of the raw materials needed to make products and near the markets for those products. Over the past 50 years, however, companies have become increasingly free to seek out almost any location in the world for their production facilities (or their headquarters or design facilities for that matter). In many important ways, this vast global pool of goods, services, technology, money, ideas, and information makes it as easy to produce in Indonesia as Indiana. In the words of Peter Sprague, chairman of National Semiconductor Corporation, a U.S. company, "We are using Russian engineers living in Israel to design chips that are made in America and then assembled in Asia."

Even more ominously, the increasing educational and skill levels of workers in such nations as India, Brazil, and Korea mean that nations with much lower costs of production will continue to challenge Western countries for even better paying jobs. According to U.S. Secretary of Labor Robert Reich, at the time a faculty member at the John F. Kennedy School of Government, Harvard University, "Worldwide competition continues to compress profits on anything that is uniform, routine, and standard that is, on anything that can be made, reproduced, or extracted in volume almost anywhere on the globe."

In short, the idea that nations have separate and distinct economies, that actions can be taken within a nation's borders with little or no attention paid to what is happening elsewhere, is obsolete and possibly economically fatal. In Drucker's words, "The world economy [is] in control [and, consequently, government economic development efforts are] most likely to succeed the more they are based on the new realities of a changed world economy."

Changing Products and Technology

As if this changed world economy were not threat enough, accelerating change in markets, products, technology, and workplace organization have further altered what it takes to compete. Partially in response to low-wage competition, national markets once served by mass-produced goods are being replaced by ever-more segmented, niche-oriented markets increasingly subject to international competition. Following suit, standardized products are being replaced by custom products—highly differentiated with narrower applications—designed to satisfy niche markets. Though cost continues to be important, such products increasingly compete on the basis of quality, precision, performance, and reliability of delivery and service. Although more products and markets mean more opportunity, they also mean shorter life cycles and a more volatile business environment.

Technology plays both a leading and a supporting role in the changes in products and markets. For instance, advances in telecommunications help make worldwide production systems possible. Other technologies help monitor such far-flung systems and keep producers apprised of how markets are changing. Technology also is improving product quality by using robotics, refining the tolerances of parts so they fit together better, increasing the links between design and manufacture through computer-aided design/computer-aided manufacture, and monitoring the manufacturing process through statistical process control.

Last, a 1990 study by the Massachusetts Institute of Technology, *The Machine That Changed The World*, examined changes in how automobiles are made and noted an even more important and long-term influence of technology. Briefly, because of advances in technology, manufacturing is moving away from large production runs of single, standardized items produced on specialized machines to shorter runs of several different products. The latter are created on less specialized but more flexible machines that can be quickly customized by computer technology. Thus, technology improves productivity while also allowing greater variety and, potentially, greater agility in the marketplace, with costs similar to those of mass production.

The rapid changes in products, markets, and technology create pressure for substantial changes in the shape and size of business organizations. The need for flexibility, speed, and quality is forcing companies to "flatten" and to reorganize

their production processes. Companies are "hollowing out," shedding overhead and ancillary business and product lines to concentrate on their core business. As a result, the number of indirect workers and middle-level managers in supervisory and technical positions is decreasing substantially with consequent changes in the roles and responsibilities of those remaining, especially on the shop floor. In the words of Stuart Rosenfeld, a highly respected observer of economic competitiveness and public policy:

> To excel along these dimensions requires that firms continually innovate and "modernize"—use state-of-the-art management practices and process technologies— . . . [how] manufacturing firms process material, organize people, use information, integrate systems, and accommodate innovation.

Like the global economy, these trends loom large over the workforce, the structure of business, and the bottom line. The hallmarks of competitive success in the world marketplace today include access to niche markets, rapid product introduction, attention to rapidly changing consumer tastes, an emphasis on quality and innovative product features, ease of manufacture, superior management, attention to the logistics of supply and delivery, and devotion to product service.

Current State Economic Development Strategies

Contrast the emerging factors of competitiveness just discussed with the one issue at the core of most legislative debates about what matters to business—cost. Costs in the form of workers' compensation, unemployment insurance, product liability and tort reform, and taxes. As one might expect, then, the issue of cost is also at the core of most state economic development programs. Coupled with the most common refrain from those programs—jobs, jobs, and more jobs—it is easy to conclude that, relative to what it takes to compete, most current state programs are headed in the wrong direction, a direction that may be worse than irrelevant.

Most state industrial recruitment and retention efforts involve lowering the cost of doing business by keeping taxes low, offering free land, and providing various financial incentives, including tax credits, subsidized leases, low- or no-interest loans, and subsidized training. In the face of the realities of the current economic environment, though, states are rethinking this approach. Distilled to its essence and in the words of Doug Ross, Assistant Secretary, Employment and Training Administration, U.S. Department of Labor, who directed Michigan's Department of Commerce under Governor Jim Blanchard, states have three choices: get out, get poor, or get smart.

Getting out is straightforward—quit trying to compete and abandon various markets to foreign competition. In order to get poor, states should continue to

emphasize cost as the most important aspect of business competition. In that way they tacitly agree to compete against areas of the world able to pay workers a day's wage that is less than U.S. workers make in an hour. In the long run, the existing standard of living in the United States will fall, and with it the tax revenue needed for schools, roads, etc. The importance of cost to business should not be underestimated. But overemphasis on that single dimension of competition can obscure reality: business operates in a complex environment and competes across many different dimensions; and, in many important situations, cost is not the most important issue affecting long-term profitability or survival.

To get smart, state programs need to deal with the larger context in which states are competing by improving the capacity of local economies, firms, and workers to innovate in response to market forces. Central to the get-smart strategy is a new goal for economic development. Instead of "job, jobs, and more jobs," the goal is *creating wealth* by constantly increasing the type of products and services in demand in the global marketplace and, as important, the value added to those products and services. In other words, it is not just any job, but higher skill, higher wage jobs able to contribute to an increasing standard of living that matter. Strategies used by states to help businesses and communities compete include the following:

- Maintaining adequate communication and transportation systems;
- Improving access to technology and the means to apply technology to existing products and processes;
- Increasing the availability of capital for modernization and product development; and, perhaps most important,
- Supporting a well-trained workforce and encouraging new management and organizational structures able to effectively use these tools.

According to recent analysis by the staff of **Oregon's** Joint Legislative Committee on Trade and Economic Development:

> Strategies that upgrade the skills of workers and the productiveness of businesses can allow workers to justify higher wages and enable businesses to pay them. In order to afford to pay highly skilled workers high wages, firms will need to compete at the high end of the market, producing high value-added goods. Generating growth in high wage, high value-added industries can encourage and support higher wages and higher value-added in other sectors of the economy.

BEST COPY AVAILABLE

Smart Workers, Smart Businesses: Competence and Competition

As products and markets become more complex and change more quickly, an ever-higher premium is placed on the skills and knowledge needed by the workforce—both management and production workers—to create new products more quickly, to remain aware of how markets are changing, and, especially, to continually learn and adapt to the changes in both. In short, the way work gets done is changing dramatically.

As the MIT study demonstrates, the new shapes of businesses and production processes push more decisions closer to the point of production, i.e., toward front-line workers and managers, and link more closely the efforts of product designers, engineers, supervisors, and production workers. Workers are given more responsibility to use their judgment and make decisions for many tasks from quality control to production scheduling, and they become integrated into the planning and accountability structure of the firm. Companies increasingly are using teams of multiskilled workers at all levels of production as a way of organizing production that demands more of everyone involved in technological sophistication and, especially, in problem-solving and critical thinking, teamwork, social abilities, and communication.

According to W. Streeck, University of Wisconsin professor, critical differences in how societies and companies organize themselves seem to explain major differences in the ability of economies to succeed in different parts of the world. The patterns of organizations are not the result of a particular culture but stem from decisions made by individual firms, governments, trade unions, and business associations. In a global pool of capital, technology, and natural resources, the skill of a nation's workforce may be one of the last (and least mobile) sources of competitive advantage.

In a similar vein, Peter Senge writes in *The Fifth Discipline: The Art and Practice of the Learning Organization* that the "organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn at *all* levels in an organization." In such a competitive environment, the education and skills of a nation's people and how they are organized for work, their ability to learn quickly and to promptly put that knowledge to work efficiently and effectively become the foundation for economic success and the focus around which a new conception of competitiveness is coalescing.

This new view of what it takes to compete is embodied in a concept variously known as "high-performance work organizations," the "reengineered corporation," or the "virtual corporation," and how they do things is referred to as "total quality management," "lean production," and "diversified quality produc-

tion." In essence, the high-performance work organization shapes itself so that it can constantly learn to do things better and to constantly apprise itself of what is happening outside and learn from other firms. Two hallmarks of high-performance work organizations are decentralized decision making and the formation of flexible, cross-functional teams responsible for such diverse duties as training, hiring, customer service, product design and development, and problem-solving. Other characteristics include an emphasis on product quality, especially toward international ISO 9000 standards (international quality assurnace standards required for trade in the European Community); an ongoing commitment to innovation and adding value; motivating every member of the organization; and accommodating workers' different learning styles.

Unfortunately, according to the 1990 report, *America's Choice: high skills or low wages!*, only 5 percent of the firms in the United States could be considered at that time to be high-performance work organizations. Though other authors' estimates are higher, those estimates reveal that the vast majority of firms still are organized as traditional hierarchical work organizations with strict divisions between management and workers governed by detailed work rules that rigidly limit job responsibilities. There is evidence that many owners and managers are unwilling to grant workers greater autonomy and control or are uncomfortable with transforming the workplace in ways that allow workers to be more productive. These attitudes may be a result of a lack of familiarity with the concepts and practices of high-performance work organizations (a consequence of a lack of wage pressure). Or it may simply be easier for employers to move production offshore.

On the other side, employees may view the high-performance work environment with suspicion. Rather than a means for greater involvement, workplace control, and job satisfaction, the new duties and increased responsibilities may, instead, be viewed as merely another management tactic to get more for less. Too, fear of change, a overall lack of concern, and lack of information on their long-term prospects contribute to an overall lack of enthusiasm about the latest management and production techniques.

For American society, this new mode of doing things has profound implications for the existing education and training system because it dramatically increases the importance of upgrading the skills and abilities of the existing workforce and of creating effective school-to-work transition programs. In *Thinking for a Living: Education and the Wealth of Nations*, however, Ray Marshall and Marc Tucker note that the high-performance mode has emerged as the primary business strategy only in those countries where the entire society has made a commitment to it, a commitment that requires high levels of public investment over a sustained period of time.

New Realities, Changing Roles

The fundamental importance to overall competitiveness of a nation's workforce and how its businesses operate present clear and daunting challenges for state legislatures.

- **Coordination**. The sheer number of players, the diversity of factors affecting competitiveness, and the speed of change increase the need for better connections between existing programs, particularly those in different departments as well as between the programs and their intended customers.

- **Awareness**. The need to improve understanding in the public and private sectors of the larger context in which development efforts occur, the fundamental changes in the nature of economic competition, and the potential impact of those changes.

- **New approaches**. The need to devise effective means by which all the firms and workers that want to move toward high-performance practices can make the transition quickly and with a minimum of disruption. However, the nature of those solutions most likely will reverberate throughout the existing structure (and budgets) of state government.

New Roles

The responsibilities of the public and private sectors in economic development matters are inherently interrelated and complementary, but to work most effectively they must coordinate. State government is in a unique position to bring together the important players in the public and private sectors in those areas critical to global competitiveness. In this situation, rather than being a direct supplier of economic development services, the most useful role of state government may be that of facilitator, coordinator, catalyst, and information provider.

In few areas is the potential for the roles of coordinator and facilitator more important than in the link between economic development and workforce preparedness. Rather than create new programs, it may be more effective for legislatures to restructure existing programs and agencies, redirect funding, and improve how services are identified and delivered.

The issue of workforce competitiveness cuts across many department and program lines—economic development, labor and employment, K-12 education, higher education, social services, community colleges. Until recently, however,

"economic development" has been left to departments of commerce or economic development, even though some of the most important state programs affecting competitiveness—education and training—are not in economic development departments. Fortunately, education is a fundamental role of state government, which is in a crucial position to improve the links between economic development policies, labor and the business community, and the education and training system and to help define the skills needed in the workplace, whether by new graduates or those already in the workforce. Thus, states can help such diverse groups develop a shared vision of what is needed to respond to the global economic challenge. Several states have created permanent, quasi-public bodies to do just that.

The **Indiana** Economic Development Council, Inc.; **Kansas**, Inc.; and the **Oregon** Progress Board represent different approaches to developing the needed information about each state's economic status, creating strategic plans for economic development efforts, evaluating programs and policies, and recommending changes. In all cases, these boards are a mixture of public and private representatives, most with a predominance of private sector members. **Kentucky**'s Economic Development Partnership has sole authority to reshape and reorganize the state's economic development programs and the power to approve new programs and projects. The more independent and decentralized nature of these structural changes also can have tremendous effects on program accountability and the normal role played by public agencies and public employees.

New Awareness

The unique position of state government also offers state officials a platform from which to increase awareness of trends affecting competitiveness and, therefore, the well-being of its citizens. The effort involves effective communication with and among all those potentially affected by the changes in the nature of economic competition—citizens, elected officials at all levels, economic development agencies and personnel, and other agencies with programs that affect workforce preparedness. In many cases, this will be a new role for those officials, particularly those in state economic development programs accustomed to industrial recruitment. Workers and businesses in particular need to be constantly aware of the forces reshaping the world in which they work and live and the consequences of failure. This is especially true—and especially critical—for small- and medium-size firms.

Relative to large companies, small- and medium-size firms often lack the time, resources, and expertise to compete effectively in technologically sophisticated international markets. They are often too busy to notice, or they may sense that something is wrong but do not know what. If they have an inkling, they may not know what to do or have the means to do it. With corporate downsizing and

other trends, the average company size is declining, increasing the number of small- and medium- sized enterprises (SME). SMEs already create a significant number of jobs; current trends merely reinforce their importance. And yet, relative to the hoopla surrounding a Saturn or a Mercedes-Benz plant, most people are not aware of the battles fought by SMEs.

New Structures: Helping Industries Help Themselves

Small- and medium-sized companies, contribute greatly to states' economies, but they often lack resources and expertise. States, therefore, have an opportunity to help this important segment of the economy. And yet, even though each state has tens of thousands of such firms, states continue to deal with companies one by one, an inefficient approach when whole industries must improve their performance and adjust to new economic realities. Most often, too, existing state programs were created at the behest of legislative mandates or agency fiat with little analysis of existing market or competitive conditions facing firms in various industries and little input from the industries they were designed to help. Quite simply, the needs are too great for available public dollars to serve many firms, and the rate of change is too swift to expect any public agency or program to keep up.

To address these circumstances, some states have transplanted from Europe a concept designed to help industries organize themselves to solve common problems. The thought behind these "flexible networks" or "industry groups" is to gather groups of firms with common problems and help them help themselves find solutions to those problems. By dealing with groups of firms, whether peers within an industry (horizontal) or a large producer and its suppliers (vertical), working on shared concerns improves the impact that programs have by reaching several firms at once. The method also allows firms to pool resources for equipment or projects too large for each to handle alone. The group approach focuses attention on issues affecting industrywide competitiveness, not on what government can do to subsidize an individual company's bottom line.

Perhaps most important, by putting business in charge of designing and operating the programs, the group approach can provide assistance genuinely useful to business. In terms of the global economic environment and the other factors affecting competitiveness, firms working in groups can:

- pool expertise to improve their response to changing technology and markets;
- lower the risk to individual firms of accelerated modernization;
- ease the transition to high-performance work models;
- encourage new technology investments;
- organize employee training programs; and
- develop collective market intelligence and foreign trade initiatives.

Programs created by industry, operated by industry, and funded by industry participants will have the burden of proving to those participants that those programs are worthwhile and cost-effective. Proving that programs are effective can protect valuable initiatives in difficult fiscal times; and in difficult times, it may be prudent to locate many of these initiatives outside government altogether.

These advantages are particularly important in the current economic environment. Though there is ample evidence of the increasing importance of small- and medium-sized manufacturers in generating jobs and innovating approaches, such firms working alone lack the needed expertise, time, and resources to adequately confront the changes they face. According to Brian Bosworth, former director of the **Indiana** Economic Development Council, Inc., and a principal of Regional Technology Strategies, Inc., firms learning within an industry group setting will

> likely play a major role in accelerating the modernization process, in narrowing the gap between best practice and common practice in manufacturing. That's because, at its core, manufacturing modernization is about learning: Learning what it takes to be competitive at the high end of international markets—because, as Willie Sutton said, "That's where the money is"—and learning how to do it.

Among the states, **Oregon** has most enthusiastically and comprehensively adopted the network concept in economic development. **Oregon's** Wood Products Competitiveness Corporation, Inc., (WPCC) was one of the first state-initiated industry group efforts. The corporation was originally created as a state agency and supported with $2.25 million in public funds. Since that time, WPCC has become self-supporting as a private, nonprofit association involved in joint marketing, technology and training programs, and loan guarantee programs created with help from state government and the **Oregon** Bankers Association. **Oregon** also is pursuing this group approach in other industries through its Key Industries Program, which emphasizes high-performance work practices and the formation of interfirm networks and industry associations. The state also has begun to reorganize its economic development department to reflect this industry approach.

In 1994, **Kentucky** established network programs in the wood and agricultural products industries similar to those of **Oregon** and tied the network program to the adoption of high-performance work methods. The agricultural products network initiative is operated in conjunction with the **Kentucky** Economic Development Finance Authority and involves loans to support network projects and tax credits on income related to network activities. A newly established system of research centers also is required to give preference in participation to networks of firms and to the state's key industries (Senate Bill 277, 1994).

According to the Corporation for Enterprise Development, **Pennsylvania**'s Manufacturing Innovation Networks (MAIN) program has nurtured the growth of at least four flexible manufacturing networks involving more than 600 firms in the plastics, tooling and machining, and textile and apparel industries. According to Andrew Greenberg, secretary of **Pennsylvania**'s Department of Commerce, these efforts operate in conjunction with the state's network of nine Industrial Resource Centers (IRCs) and loan and grant programs at the **Pennsylvania** Industrial Development Authority. IRCs help manufacturers and their supplier base modernize. The centers were initiated by government but are directed by private-sector expertise and customized according to regional conditions and strengths. The state also has restructured its industrial development loan authority to support the modernization of firms with high-wage, quality jobs and those that adopt ISO 9000 or qualified original equipment manufacturer certifications.

In a slightly different approach, the state of **Washington** recently considered (but did not adopt) legislation that would have authorized the state Department of Trade and Economic Development to establish a competitive grant program for groups of firms to create business networks. The program would have awarded up to $70,000 for the formation of networks and up to $20,000 to support network activities and projects. Federal economic development funds would have been directed to assist firms in forming flexible networks (Senate Bill 6321, 1994). **Oklahoma**'s Alliance for Manufacturing Excellence also incorporates the broker approach. Other states pursuing or examining these "sectoral approaches" include **Arizona**, **Michigan**, and **New Jersey.**

Managing the Transition

The magnitude of these prospective changes, the apparent need to reorganize existing programs, the likelihood of reallocating existing resources, the greater likelihood that states will be forced to do more with less, resistance to change, threats to funding and program status—state legislatures will have their hands full.

Many of these changes will require legislatures themselves to change their behavior as well. For instance, legislatures and governors normally maintain influence and control by placing programs within an existing state agency and funding the program through the normal budgeting process. If funding comes from more outside sources and day-to-day operations are in the hands of several public and private entities, these new approaches also challenge current public control and accountability procedures. And yet, current methods do not appear up to the task. Legislatures may be forced to decide between existing tax credits that influence business location decisions and the need for more funds for education and training targeted at other issues of competitiveness. Given the expense of education and training, the choice may not be easy.

The scope of the economic forces at work and the extent of structural change imply that a wholesale reorientation of the personnel in existing agencies may be required. Instead of providing one service or a narrow range of services directly, agency employees will most likely help by identifying a range of programs and services of benefit to groups of firms or to an industry sector. Many of the needed services will be outside the agency and, probably, outside state government. Such changes will require that government employees become familiar with the many different types of programs and assistance that are available and how sectors, companies, communities, or individuals can make the best use of them. Changes also may be required in the way agencies organize assistance and how they are evaluated. Indeed, some states have passed laws requiring state agencies to reorganize themselves toward the high-performance model. Legislatures, governors, and program managers will have to figure out how to reorient and retrain existing personnel.

Education, Workforce Skills, and Economic Competitiveness

Continuing their perennial role as laboratories of innovation, states have responded to these new economic challenges with a variety of approaches from both the demand and the supply sides of the problem. On the demand side, states have devised several programs to encourage and support business to adopt more sophisticated management practices, practices that will require more of their managers and workers. On the supply side of education and training, states have launched both new initiatives and redesigned existing programs.

Moving Business Up the Performance Curve

Working with business to increase the skill levels required of their workers has important implications. If society produces more skilled workers but employers do not demand those higher skills, skilled workers may find frustration rather than employment. Though there is evidence of a need for improved skill levels in the workforce, as noted previously, there also is evidence that many owners and managers are unwilling or uncomfortable with transforming the workplace in ways that allow workers to be more productive, or they do not see a need. Whatever the implications of these attitudes for business, public officials should be aware that they may have negative long-run implications in terms of the existing standard of living of American workers.

States have taken several different approaches to promoting and implementing the concept of high-performance work organizations, from stressing the importance of the idea in state strategic plans for economic development policy to specifying preferences in state assistance programs for companies that practice or agree to adopt such practices.

A 1992 **Oregon** legislative report suggested the following ways in which the state could help firms adopt high-performance practices:

- Educate firms about such strategies to improve business competitiveness as total quality management (TQM), statistical process control, quality function deployment, new ways of organizing workers and production processes around teams, just-in-time inventory management, customer involvement, and benchmarking.

- Establish a "high-performance training fund" to help managers and workers in the areas of communication, teamwork, and quality control.

- Provide technical assistance to firms in basic quality management to help firms make the shift from mass production processes to the high-performance model.

- Establish continuous improvement user groups to help firms learn from each other as they implement quality improvement programs.

- Teach high-performance concepts in high school, professional technical education programs, apprenticeship programs, and college business schools.

- Educate firms about the international ISO 9000 quality standards and help them become certified.

- Identify firms currently using high-performance practices and examine their characteristics, determine how those firms can serve as models for other firms, and survey high-performance firms regarding what they need from government and what they can best do on their own.

As a result of the **Oregon** legislature's inquiry into high-performance work organizations, those firms that met with the Legislative Joint Committee on Trade and Economic Development created their own trade association, the Oregon Quality Initiative, to further their learning and advise the state on policies to assist such firms.

Kansas now has the first state economic development strategy to focus both on a highly skilled workforce and globally competitive firms that offer "high quality, high valued-added products and services." The goals of the 1993 **Kansas** strategy, *A Kansas Vision*, are explicit: compete in the global marketplace through high-quality, high value-added products and services using a highly skilled workforce that is internationally competitive. According to the report, "This strategy has a very precise focus: the development of high-performance firms using highly skilled workers to produce higher value-added products and services and to provide high wage employment." **Kansas** appears to be one of the first states to articulate explicit principles of economic development and competitiveness in its new strategic plan. Legislation recently adopted by **Kansas** also gives preference under the state's incentive programs to companies practicing high-performance work organization techniques.

In 1994, **Connecticut** adopted legislation (Public Act 94-116) that gives priority to receiving assistance from the state's loan, grant, and job training programs to firms that practice high-performance work techniques. The act contains a long list of characteristics of high-performance work organizations related to structure, production systems and work environment, labor-management relations, and customer relations. Jointly, the state Department of Economic Devel-

opment, Connecticut Development Authority, and Connecticut Innovations, Inc., are charged with developing goals, objectives, and quantifiable outcome measures for high-performance work organizations according to the percentage of financial assistance they receive. A training program in high-performance work practices also is established as a joint effort between the state Commerce Department, a "manufacturing application center" in the state university system, and a nonprofit educational group. This training is explicitly tied to the state's program of flexible manufacturing networks. Last, the commissioner of the state's Economic Development Department is required to report to the General Assembly regarding the creation of a grant program that would allow groups of firms to obtain high-performance training for their employees.

As previously mentioned, **Pennsylvania** has modified several of its business assistance programs to focus on firms pursuing high-performance practices, link its finance and manufacturing technology assistance to support such practices, and support collaborative projects among firms. **Washington** introduced, but did not adopt, legislation to create high-performance work organization programs. A study committee in **New Jersey** made similar recommendations, including publicizing the high-performance concept, establishing mentor programs, developing coursework on related production techniques such as total quality management and statistical process control, and giving priority assistance in existing programs to firms that are practicing or that agree to adopt high-performance techniques. The **Washington** legislation even directed the state's Commerce Department to adopt a high-performance model for its own operations.

The Classroom and the Workplace

The 1983 report *A Nation at Risk* was America's alert to the declining competence of its citizens. Should we be surprised that a school system designed at the turn of the century to produce workers for a mass production economy is now failing to produce the workers demanded by a knowledge-based global economy? Since the report's publication, states, cities, and school districts have responded by designing (and redesigning) hundreds of education programs and spending hundreds of millions of dollars on educational reform. **Kentucky's** reform effort demonstrates that no area of education has been left untouched. It

- planned for site-based school decision making by 1996;
- earmarked $1 billion in new funds for schools;
- provided social and employment services for at-risk students and their families;
- facilitated professional training for administrators and teachers through regional centers;
- linked teachers, students, schools, school districts, colleges, libraries, and educational television in a statewide technology network; and
- held schools and the state accountable for student performance.

Assessment of student performance also has received much attention be-

cause of a growing sense that a high school diploma does not ensure that a student has the skills to perform in today's economy. As noted previously, not too long ago the lack of reading, writing, or math skills did not disqualify someone from getting lifelong employment at a job that paid a decent wage and offered good benefits. No longer; the inability to read, write, and do math increasingly consigns a person to marginal, low-wage jobs with no prospect for advancement. To improve their skill level as well as the types of skills students learn, schools are increasing graduation requirements and explicitly outlining standards of content and performance. Special emphasis is placed on understanding and using concepts and ideas, solving complex problems, demonstrating writing skills, and working successfully in group settings. Several states have instituted programs that require students to earn a series of "certificates of mastery" that demonstrate their abilities in specific areas.

Oregon provides a good example of linking overall school reform, the state's economic development policy, and larger workforce issues. In addition to extensive reform efforts, the state instituted a comprehensive school-to-work transition program (discussed in more detail later). To integrate the various initiatives, **Oregon** also created two oversight bodies, the Oregon Progress Board (discussed previously) and the Oregon Workforce Quality Council. The council is intended to coordinate education, training, and job placement programs; develop a state strategy and objectives to create a highly skilled workforce; set measures for accountability; and supervise the implementation of critical education and job training programs.

Any discussion of workforce competitiveness should note reform efforts intended to improve the relationship between what a student learns in school and what is required in the working world. More emphasis is being placed on the ease with which students can adapt from school to work. The success of European countries in developing large numbers of highly skilled workers is based on a well-organized system that explicitly integrates what students learn in the latter half of high school with what will be required on the job. The system also gradually increases the amount of direct work experience that uses that knowledge. The initiatives in the United States have names such as school-to-work transition, youth apprenticeship, "tech-prep" and "2+2" programs, school-based enterprises, and career academies.

School-to-Work Transition: Training the Noncollege-Bound

Much of the economic success of Germany and other European countries is the result of comprehensive programs that create an almost seamless system for the transition from school to work and back again. The first nine years of formal schooling often are followed by extensive apprenticeship programs that weave together further classroom instruction in more advanced and theoretical study

with practical, on-the-job experience. Employer organizations and labor representatives are members of boards at the state and local level that define standards, assess student performance, and establish and monitor the contracts entered into by apprentices and companies. There are only a few such programs in the United States, and they do not operate on a scale comparable to those in Europe (3,500 students in the U.S. vs. 1.7 million students in Germany in 1989). Except in instances where schools or school districts have been "adopted" by a company, employer and labor groups are not involved in defining the skills levels that students must meet in order to be competitive.

However, as a result of such seminal reports as *America's Choice* and *The Forgotten Half*, increasing attention is being focused on those youth who either do not go to college or do not complete college. In the United States, only 25 percent of youth graduate from college. Thus, a large segment of the nation's workforce could be well-served by such training opportunities. Unfortunately, unlike its competitor nations, this country essentially ignores the remaining 75 percent of youth by not providing them with professional and technical education and by not building bridges to the world of work. *America's Choice* included the following recommendations:

- Set national and state educational standards that are measurable and of a high standard;
- Create initial "certificates of mastery" for 16-year-old students that are based on performance;
- Establish educational and social services to dropouts;
- Provide three- to four-year professional and technical educational programs for the those not going to college;
- Institute a 1 percent tax on company payrolls for workforce training; and
- Create regional employment and training boards to unify and coordinate services.

Several states have adopted laws mandating creation of school-to-work systems. Still others are using federal planning grants and other funds to investigate and design such systems. Given that such programs are unfamiliar to most school systems, students, and businesses—just about everyone—organizing and supporting the participation of all groups becomes a crucial first step.

In 1991, the **Oregon** legislature enacted the first statewide school-to-work transition system for youth not going to college. The bill stems from the emphasis that the state's strategic plan, *Oregon Shines*, placed on developing a high-quality workforce as its key competitive advantage. The new **Oregon** system makes technical and occupational education as important as college preparatory education and involves redesigning the secondary school system to prepare stu-

dents for work if they are not going to college. By the 10th grade, students will have received a certificate of initial mastery that indicates that a student has demonstrated the ability to perform basic skills very well. Students then choose either a college preparatory or a professional, technical, or vocational career path. The noncollege-bound youth will work toward earning a "certificate of advanced mastery" in a specific subject area by compiling a "portfolio of performance" by which they have demonstrated mastery of concepts and the ability to apply them to work. Performance is tied to world-class standards.

The system links high-quality classroom instruction to a European-style system of training and work experience. Teachers and businesses will cooperate to develop new, relevant curricula to train students for highly skilled work and to provide related, part-time, on-the-job training experiences. In a recent article in *State Legislatures* magazine, David Shreve and Scott Liddell point out that elements in the new system allow students to change back and forth between the two paths should they change their career goals. Those failing to receive their certificate are given additional help.

Connecticut recently adopted legislation that provides explicit standards for school-to-work programs for students in grades 10 through 12. The programs must include at least 80 hours per year of instruction in a "career cluster"; between 180 and 360 hours per year of worksite experience covering all major activities related to the career cluster; and coordination and explicit agreement of participating employers, schools, and students. "Career clusters" are defined as a range of occupations sharing a set of general academic and workplace skills and knowledge, career guidance, and information on higher educational opportunities. Students receive a career certificate upon completion of an approved career cluster. In general, the act requires that students be paid for work performed while in the program at a rate negotiated by employers and the school principal. Existing employees cannot be displaced by students nor have their work hours reduced. School-to-work participants are not subject to state unemployment compensation laws and some child labor laws. State grants are authorized for local and regional boards of education, voc-tech schools, and regional educational service centers to support creation and implementation of school-to-work programs.

At least four other states—**Arkansas**, **Maine**, **Pennsylvania**, and **Wisconsin**—have launched pilot youth apprenticeship programs. **Wisconsin** passed a statewide youth apprenticeship statute in 1992; in 1993, Governor Tommy Thompson asked the legislature for more than $10 million to develop the academic and training standards as well as a counseling and guidance component for the youth apprenticeship system. According to *Education Week*, **California**, **New York**, **Washington**, **Massachusetts**, **Minnesota**, **Texas**, and **Rhode Island** are among states also studying school-to-work transition.

BEST COPY AVAILABLE

Workforce Training

A basic conflict of politics and power bedevils workforce training systems in most states. Fights over who has the authority to administer the state's employment and training system and over the role of each agency are usually rampant. Agencies, like bureaucracies everywhere, seem more concerned with protecting their turf than with contributing to a coherent approach as originally conceived in the federal Job Training Partnership Act (JTPA). The proliferation of state and federal workforce training programs has become a confusing, duplicative maze that lacks coordination and integration. For example, **Ohio**'s Legislative Budget Office found that the state spends between $846 million and $980 million for more than 60 job training programs. The resulting "systems" of programs in place in most states are cumbersome for their intended users, often redundant, and difficult to evaluate. Unfortunately, because the solutions pursued are not aimed at the root cause of these problems—fragmented governance—the results of recent reforms are mostly marginal.

Coordinating federal programs. Recent amendments to JTPA authorized governors to create "human resource investment councils" (HRICs) to coordinate federal JTPA, Carl Perkins vocational education, and adult education programs as well as other federal programs that involve employment and training. A number of states have established HRICs by statute, including **Massachusetts**, **New Jersey**, and **Washington**. Unfortunately, HRICs often lack significant legislative involvement. In addition, a state that has developed its own workforce readiness strategy may find an HRIC unduly restrictive, reflecting mainly federal priorities and not state concerns. In recent years, some states have taken steps to rationalize their existing training systems to eliminate duplication, fragmentation, and jurisdictional battles among the service providers and to make the system more responsive to its clients' needs. To address those policy concerns, some states, including **Indiana**, **Kentucky**, **New York**, and **Wisconsin**, have created cabinet-level entities.

In 1991, **Oregon** created the Oregon Workforce Quality Council to coordinate education, training, and job placement programs as well as state policy on workforce issues. The council replaces numerous state and federal education and training panels and seeks to integrate programs and exert greater control over federal funds for job training and education. An innovative aspect of the council's work will be to establish regional workforce committees that create "service delivery agreements" to integrate local job training and placement services, and thus eliminate duplication. To follow outcomes, the council also will supervise development of a system to track the workforce market experiences of traditional school graduates and participants in job training programs. These data will provide the state with measurable evidence of the programs' effectiveness.

Adult Workers

The ability of a company's workforce to learn and adapt to changing conditions is at the heart of the high-performance work model. The issue of retraining the existing workforce is, therefore, at the heart of economic competitiveness. With approximately three-quarters of the workers for the 21st century already in the labor force, addressing the skill needs of existing workers becomes critical. For both the public and private sectors, however, finding the additional resources and building a system to match the needs of those in the workforce represent formidable challenges. Although education generally receives more than half of a state's budget, 80 percent to 90 percent of the funds are spent on K-12 and higher education. Although the private sector spends tens of billions of dollars more for on-the-job training, most of that is spent by a very few companies and is directed at managers and higher level technical professionals. Finally, much of the funding provided through federal programs is for the unemployed or disadvantaged workers.

Although the advantages of a highly skilled workforce would seem obvious to business, enough disincentives exist to keep many employers from spending more on worker training. First, the costs are high (especially for smaller companies), in terms of both the training itself and the lost time away from work. And employers fear they will lose the benefit of that expense if employees leave. Last, as noted earlier, in 1989 only an estimated 5 percent of employers used high-performance practices, so many traditionally organized businesses do not need more highly skilled workers. On the employee's part, fear of change, general lack of concern, and their failure to more carefully examine the long-term prospects of various occupations create further barriers to effective retraining programs.

The states that have taken on the workforce development issue are the same states that have accepted the importance to overall competitiveness of the high-performance work model—**Oregon**, **Kansas**, **Connecticut**, and **Pennsylvania**. **Illinois** has instituted a workplace literacy grant program to provide matching funds to companies that provide basic skills training for their workers. The state also chartered the Prairie State 2000 Authority to provide grants and loans to individuals and to qualifying businesses to retrain workers in new technologies. Other initiatives seek to address the consistent and adequate funding for workplace training needs. **California**'s Employment Training Panel works from a 0.1 percent training tax. An offset is provided by a 0.1 percentage point reduction in the firm's unemployment tax. The **Alabama** Legislature recently enacted an income tax credit worth up to 20 percent of the cost of basic skills training provided by employers.

Conclusion

People and what they know how to do may be the most important asset that states have in international competition. Put succinctly by the 1987 report *Workforce 2000*:

> Education and training are the primary systems by which the human capital of a nation is preserved and increased. The speed and efficiency with which these education systems transmit knowledge govern the rate at which human capital can be developed. . .[and] human capital formation plays a direct role in how fast the economy can grow.

If states are to survive and prosper in an international economy, they must give their citizens the tools they need to compete. Doing so will require states to reorganize and reorient their economic development and education and training programs in ways quite different from current approaches. Fortunately, many states are showing the initiative and imagination to experiment with a wide range of promising new programs.

References and Recommended Reading

Bosworth, Brian. "Learning to Learn in Networks." *FIRM Connections* (Regional Technology Strategies, Inc., Chapel Hill, N.C.) 1, no. 2 (May-June 1993).

Commission on the Skills of the American Workforce. *America's Choice: high skills or low wages!* Rochester, N.Y.: National Center on Education and the Economy, June 1990.

Commission on Work, Family and Citizenship. *The Forgotten Half: Non-College Youth in America.* An Interim Report on the School to Work Transition. Washington, D.C.: William T. Grant Foundation, 1988.

Corporation for Enterprise Development. *The 1992 Third Wave Development Awards: Recognizing Impact and Excellence in State Development Policy.* Washington, D.C.: Corporation for Enterprise Development, 1992.

Cortright, Joseph, and Tamira Miller Lohman. "Better Jobs: Oregon's Economic Challenge for the Nineties." Photocopied. Salem, Ore.: Oregon General Assembly, Joint Legislative Committee on Trade and Economic Development, January 23, 1992.

Drucker, Peter. "The Changed World Economy." *Foreign Affairs* 64, no. 4 (Spring 1986): 768-791.

Greenberg, Andrew T. "Pennsylvania's Industrial Competitiveness Initiative." *The NASDA Letter* (National Association of State Development Agencies), January 29, 1993; and "Pennsylvania Transformed: An Interview with Andrew T. Greenberg." *The Entrepreneurial Economy Review* (Corporation for Enterprise Development), Winter 1992.

Hatch, C. Richard. *Flexible Manufacturing Networks: Cooperation for Competitiveness in a Global Economy.* Washington, D.C.: Corporation for Enterprise Development, 1988.

Johnston, William. *Workforce 2000: Work and Workers in the 21st Century.* Indianapolis, Ind.: Hudson Institute, June 1987, p. xxvii.

Kansas, Inc. *A Kansas Vision: The 1993 Kansas Economic Development Strategy.* Topeka, Kans.: Kansas, Inc., February 1993.

BEST COPY AVAILABLE

Lohman, Tami. *High Performance Work Organizations: Improving Oregon's Competitiveness in the Global Economy*. Salem, Ore.: Oregon General Assembly, Joint Legislative Committee on Trade and Economic Development, September 22, 1992.

Marshall, Ray, and Marc Tucker. *Thinking for a Living: Education and the Wealth of Nations*. New York, N.Y.: Basic Books, 1992.

National Commission on Excellence in Education. *A Nation at Risk*. Washington, D.C.: National Commission on Excellence in Education, 1983.

Olson, Lynn. "States Aim to Ease Transition from School to Work." *Education Week*. June 10, 1992, p. 17.

Porter, Michael E. *The Competitive Advantage of Nations*. New York, N.Y.: Free Press, 1990.

Reich, Robert B. "The Real Economy," *The Atlantic Monthly*, February 1991.

Rosenfeld, Stuart; Philip Shapira; and J. Trent Williams. *Smart Firms in Small Towns*. Washington, D.C.: The Aspen Institute State Policy Program, 1992.

Ross, Doug, quoted in *Laboratories of Democracy*, by David Osborne, 152: Boston, Mass.: Harvard Business School Press, 1988.

Senge, Peter M. *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York, N.Y.: Doubleday Currency, 1990.

Shreve, David, and Scott Liddell. "Reading, Writing and Job Training." *State Legislatures* 17, no. 11 (November 1991): 30-33.

Sprague, Peter J., quoted in "The Real Economy," by Robert B. Reich. *The Atlantic Monthly*, February 1991.

Streeck, W. "On the Institutional Conditions of Diversified Quality Production," in *Beyond Keynesianism: The Socio-Economics of Production and Employment*, edited by E. Matzner and W. Streeck. London: Edward Elgar, 1991.

Teixeira, Ruy A., and Lawrence Mishel. "Whose Skills Shortage—Workers or Management?" *Issues in Science and Technology*, Summer 1993.

Womack, James P.; Daniel T. Jones; and Daniel Roos. *The Machine That Changed The World: The Story of Lean Production*. New York, N.Y.: Harper Perennial, 1991.

About the Author

Bill Goosman is a senior analyst with the Colorado General Assembly's Legislative Council staff. Mr. Goosman has staffed a number of legislative committees on economic development and has drafted bills for legislative leadership intended to restructure and reorient Colorado's economic development programs. He is currently staffing an advisory board charged with crafting a state economic development strategic plan. He has studied business development programs in Denmark, Germany, and northern Italy under the auspices of the German Marshall Fund of the United States and the National Conference of State Legislatures.

Learning How to Compete

Workforce Skills and State Economic Development Policies

Today's workplace has changed dramatically. Businesses must compete with companies around the world, and new technology has made it possible to make custom products for special markets. To keep up, companies and their workers must be flexible and able to react quickly to changes in products and markets.

State economic development programs, too, must adapt to this new business environment and go beyond merely giving financial assistance to businesses one at a time. The states' new role includes convincing people of the need for change, bringing together new combinations of players to explore new solutions, and supporting businesses and workers who are trying to compete on the basis of value and quality.

Key to successful adaptation are education and training for both workers and managers. The states' primary role in education positions them to provide guidance for programs to improve the link between school and work, retrain older workers and support apprenticeships for students not attending college.

Learning How to Compete: Workforce Skills and State Economic Development Policies lays out these issues and highlights successful state endeavors.

ISBN 1-55516-349-1

Item #3126

Price: $15.00